

**REMARKS**

Claims 1, 7, and 8 are currently being amended, while new claim 10 is currently being added. Basis for new claim 10 can be found throughout Applicant's specification, including page 3, lines 21-36. These amendments do not introduce new matter within the meaning of 35 U.S.C. §132. Accordingly, the Examiner is respectfully requested to enter the amendments presented herein.

**1. Rejection of Claims 1-9 Under 35 U.S.C. §102(b)**

The Office Action states claims 1-9 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 4,301,034 (herein referred to as "McDaniel, et al."). In particular, the Office Action states,

McDaniel discloses a method of preparing a catalyst comprising: combining a silicate ester and water by slowly adding said ester and said water to a solvent-water-sulfuric acid catalyst mixture which mixture contains said solvent in an amount within the range of 0.1 to 10 volume percent. . . ., after the hydrolysis is complete adding an alcohol soluble titanium compound, thereafter adding additional water and holding at an elevated temperature for 1 to 5 hours to permit particle growth, adding a chromium compound soluble in the reaction mixture and thereafter introducing ammonia to bring about gelation, thereafter aging at reflux temperature for 1 to 2 hours, removing the water and solvent and drying the resulting silica (see col. 13-col. 14, claim 42). The solvent is alcohol and suitable alcohol solvents including methanol (see col. 14, claim 46 & col. 2, ln 51). The method further comprising activating the silica resulting after said water and solvent have been separated by heating in air at a temperature within the range of 315 to 760°C (see col. 14, claim 43). Suitable chromium compounds including chromium III nitrate (see col. 5, ln 40). Suitable titanium compounds including titanium tetraisopropoxide

(see col. 14, claim 44). See also Example I at col. 7 of the reference, which teaches to use 18 g of water and 107.5 g of 2-butanol (solvent), which provides for about 16% of water, which meets the claimed water content being required in the instant claim 1. See also other Examples in the reference for further details.

There is no patentable distinction seen between the claimed process and that disclosed by McDaniel. Thus, the claims are anticipated by the teaching of the reference.

### RESPONSE

Applicant respectfully traverses the rejection of claims 1-9. In particular, for a reference to anticipate an invention, **all** of the elements of that invention must be present in the reference. The test for anticipation under section 102 is **whether each and every element** as set forth in the claims is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), (Emphasis added). The **identical** invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), (Emphasis added). The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

As outlined in Applicant's previous responses, Applicant is currently claiming, in part, a process for preparing supported, titanized chromium catalysts in which the process comprises bringing a support material into contact with a protic medium **in a single step**, wherein the protic medium comprises a titanium compound, a

chromium compound, and a water content less than 20% by weight.

However, U.S. Patent 4,301,034 (herein referred to as "McDaniel, et al.") discloses a process in which a silicate ester is hydrolyzed, with a titanium compound optionally being added after the hydrolysis reaction. Additionally, after hydrolysis of the silicate ester, but before gelation, the silicate ester is subjected to a particle growth step, preferably for 1 to 5 hours. Then, **after the particle growth step**, chromium material can then optionally be added. See col. 3, lines 3-13; col. 3, line 60 - col. 4, line 2; col. 4, lines 23-25; and col. 6, lines 19-23 in McDaniel, et al. In fact, McDaniel, et al. discloses in col. 5, lines 43-45, and col. 6, lines 19-23, respectively,

If a tergel is formed, it is preferred to add the titanium compound **before** the chromium compound.

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Most preferably an alcohol soluble titanium compound is introduced after hydrolysis, **then particle growth is carried out and then a water soluble chromium compound is added** after which gelation is carried out. (Emphasis added)

Accordingly, McDaniel, et al. clearly discloses a multistep process in which the titanium compound and chromium compound are added in distinct, separate steps, whereas Applicant is currently claiming a process for preparing catalysts in which a support material, a titanium compound, and a chromium compound are all brought into contact together **in a single step**. Therefore, since as outlined *supra*, for a reference to anticipate an invention, **all** of

the elements of that invention must be present in the reference [Id.], Applicant respectfully believes for this reason alone, the current rejection should be withdrawn.

Notwithstanding, the current Office Action states on page 3, lines 1-9,

McDaniel discloses a method of preparing a catalyst comprising: combining a silicate ester and water by slowly adding said ester and said water to a solvent-water-sulfuric acid catalyst mixture which mixture contains said solvent in an amount within the range of 0.1 to 10 volume percent. . . . , **after the hydrolysis is complete adding an alcohol soluble titanium compound, thereafter adding additional water and holding at an elevated temperature for 1 to 5 hours to permit particle growth, adding a chromium compound soluble in the reaction mixture** and thereafter introducing ammonia to bring about gelation, thereafter aging at reflux temperature for 1 to 2 hours, removing the water and solvent and drying the resulting silica (see col. 13-col. 14, claim 42). (Emphasis added)

Alternatively, as outlined above, Applicant is currently claiming a process for preparing catalysts in which a support material, a titanium compound, and a chromium compound are all brought into contact together **in a single step**. However, as acknowledged by the Examiner in the instant Office Action, McDaniel, et al. clearly discloses a multistep process, and not a single step process as currently claimed by Applicant. Therefore, since the Examiner acknowledges McDaniel, et al. does not disclose the same, "identical invention" as claimed by Applicant, and as required under 35 U.S.C. §102, Applicant respectfully believes the current rejection should be withdrawn.

In light of the above, claims 1-10 are therefore believed to be novel and patentably distinguishable from McDaniel, et al. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

#### CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the references of record. The Examiner is therefore respectfully requested to reconsider and withdraw all rejections and allow all pending claims 1-10. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

The Examiner is welcomed to telephone the undersigned practitioner if she has any questions or comments.

Respectfully submitted,

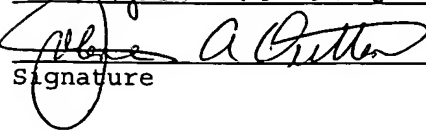
By: 

Jarrod N. Raphael  
Registration No. 55,566  
Customer No. 34872

Date: August 13, 2008  
Basell USA Inc.  
Delaware Corporate Center II  
2 Righter Parkway, Suite 300  
Wilmington, Delaware 19803  
Telephone No.: 302-683-8176  
Fax No.: 302-731-6408

Serial No. 10/538,536

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on

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## ATTACHMENT A

1. (Currently Amended) A process for preparing supported, titanized chromium catalysts, which comprises the following steps:

A) in a single step, bringing a support material into contact with a protic medium having a water content less than 20% by weight and comprising a titanium compound and a chromium compound;

B) optionally, removing the protic medium, thereby forming a precatalyst;

C) optionally, calcining the precatalyst obtained after step B); and

D) optionally, activating the precatalyst obtained after step B) or C) in an oxygen-containing atmosphere at from 400°C to 1100°C.

2. (Previously Presented) The process as claimed in claim 1, wherein the support material is a silica gel.

3. (Previously Presented) The process as claimed in claim 1, wherein the chromium compound is an inorganic chromium compound.

4. (Previously Presented) The process as claimed in claim 3, wherein the inorganic chromium compound is chromium(III) nitrate nonahydrate.

5. (Previously Presented) The process as claimed in claim 1, wherein the titanium compound is titanium

tetraisopropoxide, titanium tetra-n-butoxide or a mixture thereof.

6. (Previously Presented) The process as claimed in claim 1, wherein the protic medium is methanol.

7. (Currently Amended) A catalyst system obtained by a process comprising:

A) in a single step, bringing a support material into contact with a protic medium having a water content less than 20% by weight and comprising a titanium compound and a chromium compound;

B) optionally, removing the protic medium, thereby forming a precatalyst;

C) optionally, calcining the precatalyst obtained after step B); and

D) optionally, activating the precatalyst obtained after step B) or C) in an oxygen-containing atmosphere at from 400°C to 1100°C.

8. (Currently Amended) A process for preparing polyolefins comprising polymerizing or copolymerizing olefins in presence of a catalyst system obtained by a process comprising:

A) in a single step, bringing a support material into contact with a protic medium having a water content less than 20% by weight and comprising a titanium compound and a chromium compound;

B) optionally, removing the protic medium, thereby forming a precatalyst;



C) optionally, calcining the precatalyst obtained after step B); and

D) optionally, activating the precatalyst obtained after step B) or C) in an oxygen-containing atmosphere at from 400°C to 1100°C.

9. (Previously Presented) The process as claimed in claim 8, wherein ethylene or a monomer mixture comprising at least 50 mol% of ethylene and at least one C<sub>3</sub>-C<sub>12</sub>-1-alkene is used for preparing the polyolefins.

10. (New) The process as claimed in claim 1, wherein the support material is a silica xerogel.